Logic Model and Case Study Design
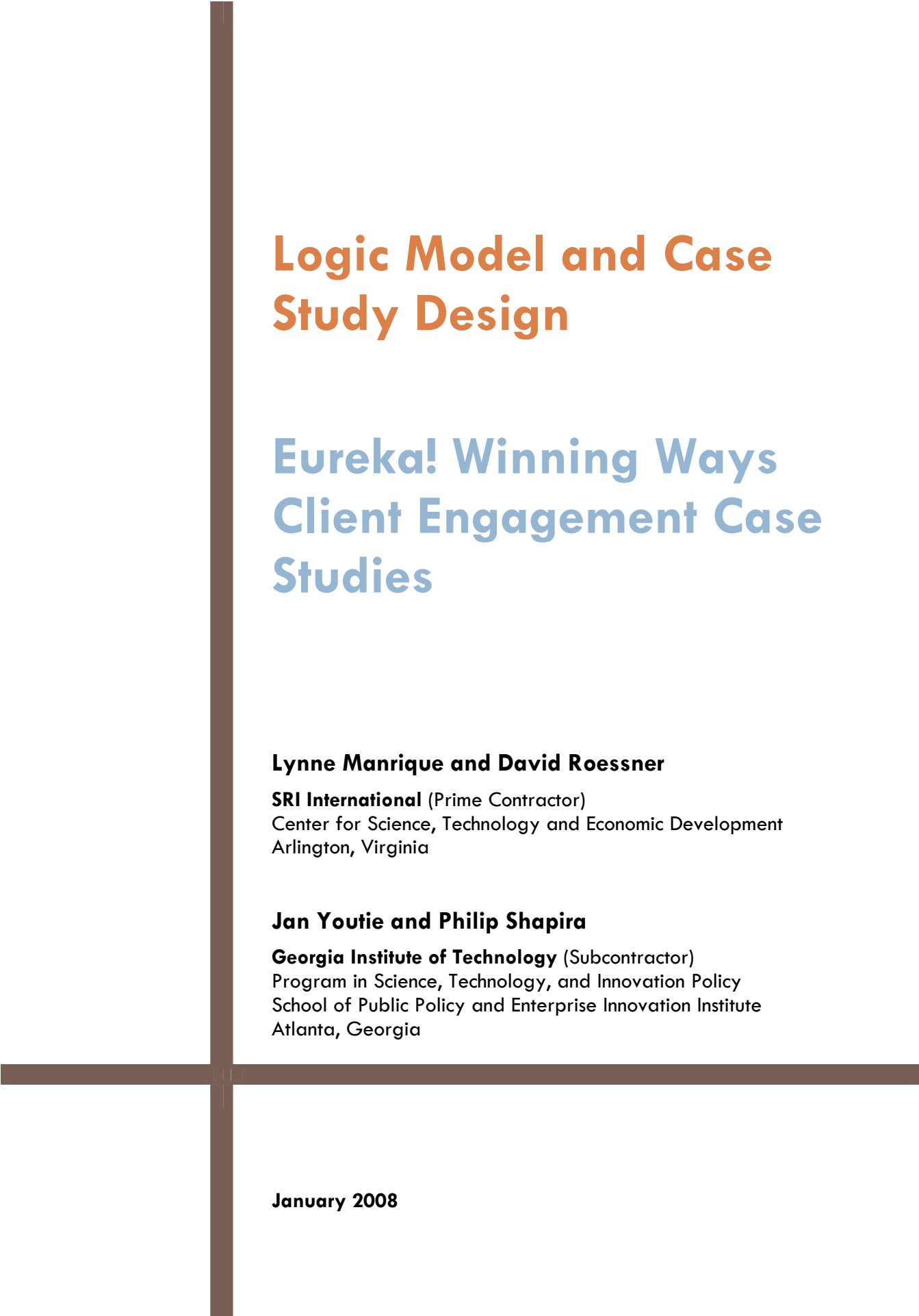
Eureka! Winning Ways Client Engagement Case Studies

Logic Model and Case Study Design

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Introduction

Background regarding Eureka! Winning Ways (E!WW)

The Manufacturing Extension Partnership (MEP) of the National Institute of Standards and Technology (NIST) has a longstanding record of helping small- and medium-sized (SME) manufacturers to identify and implement technologies and practices that improve manufacturing efficiency and product quality. In today's global manufacturing environment, however, lasting competitive advantage depends not only on careful cost control and strong quality processes but also on distinctive competencies, products, and services that are not easily copied by others, especially low cost rivals. To help its clients define and build attributes that distinguish them from their competition, MEP is developing a growth services portfolio, including programs to assist SMEs with development of new products, new customers, and new markets.

For its first growth services offering, MEP partnered with Eureka! Ranch (which specializes in helping major corporations to define new products and services) to create a customized approach — called Eureka! Winning Ways — to help small- and mid-sized manufacturers grow their revenues and profits through identification of new products, new customers, and new markets. Using a structured process based on Eureka! Ranch's work with corporate clients, Eureka! Winning Ways (E!WW) is designed to help MEP clients choose ideas that have higher probabilities of success and move selected ideas into implementation more quickly.[1] Following testing during the fall of 2006 and pilot implementation and program refinement in early 2007, E!WW was rolled out to MEP staff and clients beginning in April 2007; by October 30, 2007, the program had reached a total of 59 MEP clients.

Objectives of the Case Studies

The E!WW program is new and, therefore, the conditions that precipitate participation and influence results are not well understood. More broadly, as MEP plans and considers options for its future growth services offerings, it is necessary to define the extent to which this first endeavor, E!WW, can fulfill the growth-related needs of the full range of MEP clients. Accordingly, NIST MEP contracted with SRI International and Georgia Tech (as a subcontractor to SRI) in order to conduct case studies of eight Eureka! Winning Ways client engagements. The objective of the eight case studies is two-pronged:

- To provide detailed contextual information and analysis regarding the E!WW program's implementation and outcomes to date; and

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[1] The appendix to this report provides a summary of Eureka! Winning Ways. If the reader is not familiar with E!WW terminology, such as "growth coach" or "Discovery period," please refer to the appendix.

- To delineate the profile of E!WW clients that choose to participate in the process and to define the results (or lack thereof) generated through participation, so that MEP can estimate the universe of potential participants in E!WW.

Following from this dual purpose, the overarching research questions to be addressed through the case studies are:

- What circumstances and issues propel companies to try the E!WW approach?
- What factors – both internal and external to the company – seem to influence achievement of results?
- What types of activities are pursued by E!WW participants, and what benefits do participants experience?

In probing the research questions, the SRI-Georgia Tech team will explore the plausibility of the following hypotheses:

- The possibility that common attributes or circumstances increase the likelihood that certain types of companies will participate in the program;
- The potential for deviations in implementation, provision of support services, and/or external factors to influence the outputs and outcomes experienced by E!WW clients; and
- The possibility that certain types of ideas and activities[2] are more likely than others to be targeted for development via E!WW participation and, ultimately, are more likely to produce results.

Logic Model for E!WW Client Case Studies

A logic model underpins case study design by depicting the chronological chain of evidence progressing from inputs and activities (i.e., causes) to short-term and long-term outcomes (i.e., effects). As such, the logic model provides a clear organizational framework for developing the case study protocol, for comparing externally-collected data with interview findings, and ultimately for conducting cross-case analysis. In developing the logic model for the Eureka! Winning Ways process, the SRI-Georgia Tech team explored and incorporated:

- Key elements of the E!WW process and expected ways in which they might contribute to sought-after results;
- Availability of additional services that might have influenced achievement of short-term outputs and long-term outcomes;
- Mechanisms through which and points at which MEP staff (i.e., growth coaches) interact with E!WW participants and potentially affect results; and

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[2] For example, the E!WW approach might prompt companies to try entirely new ideas, rather than to engage in modifications of ideas already raised within the firm. Or, since Merwyn's data appears to be based substantially on product innovations, product-related ideas or activities may be more likely to be pursued through E!WW than process, marketing, or production innovations.

- Stages in the chain of evidence at which external or rival factors might explain activities or outcomes.

In the following logic model, the E!WW process is highlighted in yellow, the points at which the MEP growth coach plays a key role are illustrated in brown, and rival explanations for actions taken by and results experienced by the firm are portrayed in blue.

Logic Model: Eureka! Winning Ways

Inputs	Intervention (E!WW)	Added Services	Capabilities & Actions	Short-term Outputs	Long-term Outcomes
Conditions initiating need for assistance	**Eureka! Process** 1. Analysis, SWOT 2. Group ideation 3. Idea development, filtering	Other MEP services	Change in capabilities	Product development Process	Increased benefits to firm (e.g., new sales)
Selection/ awareness	**Merwyn validation**		Employee training / New product prototype / New sales force / Other new marketing investments / New organization of manufacturing / New equipment / Other new investments	Increased employee skills / Improved innovation environment	Improved firm performance
	Recommendations 1. New markets 2. New marketing message 3. New products/ services	Other third party services		New products, services / New marketing/sales approaches / Other short-term outputs	
	Trailblazer Process Ideation Pipeline				

MEP Marketing	**Facilitation**	**Resource matching**	**Follow up**

Rival explanations: Other interventions	Rival explanations: Resulting ideas not new to firm		Rival explanations: Other firm practices	Rival explanations: Other changes in the firm	Rival explanations: External market conditions

Firm Characteristics

Case Study Design

Following from the logic model, the case study methodology is designed to examine the progression of events and activities in sequence, from the MEP client's introduction to E!WW to the outputs and outcomes from the intervention. In exploring this information chain, the SRI-Georgia Tech team will rely primarily on two sources of data: (i) a carefully selected set of E!WW participants; and (ii) the MEP growth coaches who worked with the targeted participants. These data sources will be supplemented by interviews with Eureka! Ranch staff (to clarify any questions about the E!WW process and to gain their perspectives on implementation and effects to date) and by background research on case study participants (via secondary sources such as the companies' websites and media reports).

This section describes the SRI-Georgia Tech methodology for (i) defining the categories of information needed to address the major research questions of the case studies and (ii) selecting case study targets. The following sections of this report contain the tools that the team will use to elicit information from the data sources and to build a consistent case study database for cross-case analysis (i.e., the case study protocols).

Methodology for Case Study Design

As mentioned in the introduction, the case studies are intended to provide in-depth understanding of E!WW participants, processes, and results to date. MEP is anticipated to use this information as an input to estimate the potential demand for E!WW amongst typical MEP clients. In order to achieve these objectives, the case study methodology has been designed to address three major questions, namely:

- What circumstances and issues propel companies to try the E!WW approach?
- What factors — both internal and external to the company — appear to influence achievement of results?
- What types of activities are pursued by E!WW participants, and what benefits do participants experience?

These three research questions frame the categories of information that will be sought by the SRI-Georgia Tech team. As outlined below, each research question is further subdivided to discern nuances regarding company circumstances, slight or significant variations in implementation, and other factors that affect the E!WW process and results.

What circumstances and issues propel companies to try the E!WW approach?

To address this research question, the case study protocol will identify the factors that led the company to E!WW, including its past efforts to introduce and execute new technologies or improvements, its introduction to the program, the motivators for selecting this approach versus other options, the extent to which other options were tried (and the results from other options), and the level of urgency underlying the company's choice. Additional sub-questions will cover key elements that reveal the company's current condition (e.g., revenues, employment trends, and capacity utilization) as well as the company's future performance expectations.

The hypothesis related to this research question and sub-questions revolves around the possible tendency of certain companies to choose to participate in the program based on a common set of attributes or circumstances. In other words, one possible explanation for the decision to participate in E!WW is that certain firms, due to their nature and situation, are predisposed to seek out and take part in growth-oriented programs such as E!WW. This case study is designed to probe E!WW client firms' preexisting conditions and circumstances in order to discern any patterns that might increase the likelihood of participation. If such patterns are evident, the team will

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attempt to trace how the shared characteristics and context influence the process and/or its results.

What factors – both internal and external to the company – appear to influence achievement of results?

Within this research question, several categories of information will be sought, including detailed data regarding: the E!WW process as experienced by each company, with special attention to any deviations or alterations to the standard approach; the roles played by the growth coach within E!WW implementation; and the company's participation in any other activities or services during the same time frame as E!WW. These sub-questions will provide insight into the degree of uniformity or variation in the early implementation of E!WW, the level and types of need for support services that appear (at this early stage) to be complementary to E!WW implementation, and the extent of other possible explanations for results observed after E!WW participation.

The first two sub-questions provide information that could be used to enhance program quality and consistency. All three sub-questions contribute to hypothesis development, namely: that deviations in implementation, provision of support services, and/or external factors may influence the outputs and outcomes experienced by E!WW clients. If these events are observed, the team will analyze the nature and frequency of occurrence as well as explore the related impacts.

What types of activities are pursued by E!WW participants, and what benefits do participants experience?

From this research question, the team will obtain in-depth information about: the ideas selected for Discovery; the ideas submitted to Merwyn but not pursued in Discovery; the actions taken by the company to move ideas into development; the current status of efforts to take the idea to market; and the nature and status of any separate idea generation and development efforts being undertaken by the company. Using this data, the team will investigate similarities and differences in types of ideas pursued (as well as those not acted upon in Discovery) and the results related to different categories of ideas.

The hypothesis related to this research question and sub-question centers on whether certain types of ideas and activities appear more likely than others to be targeted for development following E!WW participation and, ultimately, appear more likely to produce results. If certain types of ideas and associated actions seem more prevalent than others, the team will explore the reasons behind this phenomenon.

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Methodology for Selecting Case Study Targets

Selection of the eight E!WW case study targets rests on two primary considerations: (i) definition of the appropriate case study sample; and (ii) within the sample group, ample representation of key variables that might affect participation, implementation, and results. The following sections describe the methodology for establishing the parameters for the target group and for identifying criteria to be used for selection of case study targets.

Definition of Target Group

As of October 30, 2007, 59 MEP clients have participated in Eureka! Winning Ways. Of these 59 clients, seven clients participated in E!WW during the pilot stage, and another 19 clients took part in E!WW sessions conducted by Eureka! Ranch staff at the boot camps that trained MEP staff to serve as growth coaches. The other 33 E!WW participant companies went through the E!WW process via their respective MEP centers and with MEP growth coaches.

The intent of training MEP staff to become growth coaches is to internalize within MEP the capability to offer E!WW. Accordingly, the potential targets for these case studies comprises the group of 33 E!WW participants, because the experience of these companies represents the "steady state" of E!WW implementation that the experience of future E!WW clients will most closely resemble.

Identification of Selection Criteria

The SRI-Georgia Tech team identified and discussed with MEP staff a number of potential criteria for selecting the case study targets. The usage of these criteria is intended to result in a case study database that contains enough variation to test the study's hypotheses and to address the key research questions. The main criteria discussed with MEP included:

- Size of the company;
- Industry or industry sub-sector in which the firm operates;
- Geographical location of manufacturer and/or of the MEP center offering the E!WW program; and
- Length of affiliation between the company and the MEP center prior to participation in E!WW.

Subsequent to discussions with MEP, the team identified an additional variable to consider in selecting case study targets, namely:
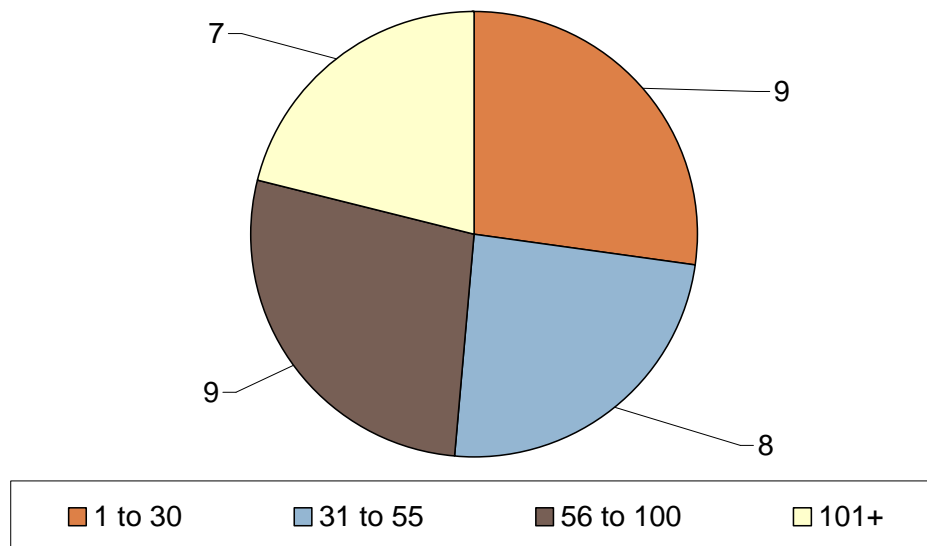
- Diversity of growth coaches conducting the E!WW program.

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Company Size

Company size is an important variable for several reasons. First, serving small- and medium-sized manufacturers is central to MEP's mission; therefore, the relevance and impacts of E!WW – MEP's first growth services offering – for such firms is crucial. Examining the E!WW process and results experienced by MEP's main overall target group – small- and mid-sized companies – not only contributes to all three case study research questions but also provides a lens through which to view the program's attractiveness to the typical MEP client.

By number of employees, 55 is the median size of firms participating in E!WW via MEP growth coaches. As indicated in the following chart, to date three-quarters of the firms attracted to E!WW have employed 100 or fewer workers. Accordingly, small firms will be strongly represented amongst the eight case studies to be conducted, though one or two slightly larger firms also should be included so that the team can ascertain any differences in motivation, implementation, or results are achieved through E!WW with such companies.

Size of E!WW Participant Companies*
(By Number of Employees)

Legend: ■ 1 to 30   ■ 31 to 55   ■ 56 to 100   □ 101+

* Includes companies that participated in E!WW with MEP growth coaches.

Industry or Industry Sub-Sector

As with company size, analyzing a variety of industries or industry sub-sectors through the case studies is likely to respond to all of the case study research questions and, especially, to provide insight into the motivating factors for E!WW participation. The array of NAICS codes represented by the 33 target participants is wide: the companies operate in 30 different codes, ranging from textile product mills to hardware manufacturing, from wood product manufacturing to agricultural implement

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manufacturing, and from magnetic and optical media manufacturing to jewelry and silverware manufacturing. As an input to selecting the eight case studies, the team will analyze growth trends for each NAICS code represented as well as selected indicators[3] that innovation might produce competitive advantage for a small- or medium-sized company in the sector. It is anticipated that the case study targets will represent a variety of situations, including growing, contracting, and stagnant industries and industry sub-sectors, and differing degrees of opportunity for innovation.

Geographic Location

Geographic diversity is a variable that is commonly considered in case study analysis and other forms of program evaluation, since location-related factors can influence implementation and results. E!WW, however, was designed to be implemented uniformly regardless of location, with the implication that, for the case studies, firm-specific factors (such as size and industry) and implementation elements (such as any differences in approach by various growth coaches) are relatively more important than the company's or MEP center's geographic base. Accordingly, location will not be a primary factor in selecting case study targets. Nonetheless, because the universe from which case study targets will be selected is itself diverse, it is anticipated that a fair degree of geographical variety will be incorporated into the case studies. Among the 33 potential case study participants, for example, 19 MEP centers in 15 states are represented. The SRI-Georgia Tech proposal for this case study anticipated that site visits at E!WW clients in four areas of the country (related to four MEP centers) would be undertaken, a number that translates into coverage of a quarter of the states in which E!WW clients are located.
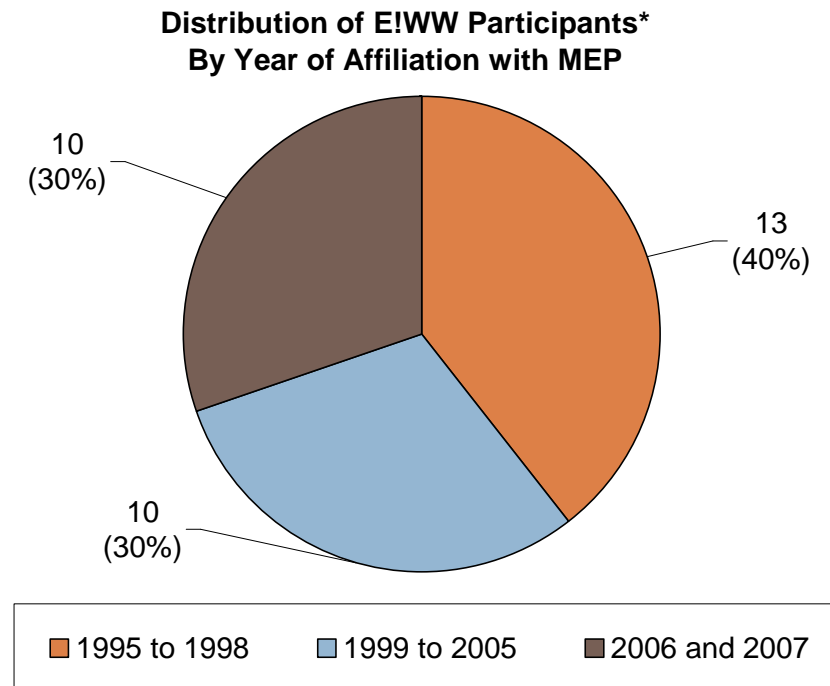
Length of Company Affiliation with MEP

A fundamental question to be addressed by the case studies is if (and/or how) E!WW patrons are similar to or different than typical MEP clients. One way of ascertaining such similarities and differences is to explore variations in motivation for program selection amongst companies that have varying experiences and histories with accessing other MEP services. As indicated in the following chart, 40 percent of E!WW participants have been involved with MEP for approximately ten years or more (i.e., years 1995, 1996, 1997, and 1998), another 30 percent have been affiliated with MEP since between 1999 and 2002, and the remaining 30 percent of E!WW participants have joined MEP in the past two years (2006 and 2007). The selection of case study targets will carefully consider these proportions of newer and older MEP affiliates.

Representation of Different Growth Coaches

Central to E!WW's design is the premise that, like lean or six sigma before it, MEP's growth services offerings can be standardized to the extent that routine replication by numerous centers is possible with the assurance that virtually the same MEP product is being offered across centers. For E!WW, the growth coach is the key element underpinning this desired consistency, since the growth coach is the client company's

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[3] These sector-level indicators could include, for example, average R&D expenditures as a proportion of sales, patents per firm, and/or others.

guide through the entire E!WW process. Accordingly, as described above in the case study design section, the case study protocol will explore any changes to the standard E!WW approach and, if such modifications are apparent, will delve into any differences in results that may be related to the discrepancies in approach. As part of the effort to discern implementation variations, the case study targets will include as wide a representation of growth coaches as possible within the likely total of four MEP centers to be visited. Representation of growth coaches will be determined by the name of the growth coach.

Distribution of E!WW Participants*
By Year of Affiliation with MEP

■ 1995 to 1998	■ 1999 to 2005	■ 2006 and 2007

* Includes companies that participated in E!WW with MEP growth coaches.

The following table summarizes the discussion above and groups the five criteria according to the level of importance assigned to each criterion in selecting the case study targets.

Summary of Key Criteria for Selecting Case Study Targets	
Criterion	Level of Importance
Company Size	Primary
Industry or Industry Sub-Sector	Primary
Length of Affiliation with MEP	Secondary
Representation of Growth Coaches	Secondary
Geographic Location	Tertiary

In line with the relative "weight" of the various criteria and the characteristics of the group of 33 case study targets, the SRI-Georgia Tech team will endeavor to select a group of eight E!WW clients that focuses on the areas of primary and secondary

importance. The following table illustrates the distribution of cases (by subcategory) that the team will strive to include among the final group of case study targets.

Proposed Distribution of Case Study Targets	
Criterion	Target Number of Cases
Company Size	
1 to 30 employees	2
31 to 55 employees	2
56 to 100 employees	2
101 or more employees	2
Industry or Industry Sub-Sector	
Number of different NAICS codes	8
Year of Affiliation with MEP	
1995 to 1998	2 to 3
1999 to 2005	2 to 3
2006 and 2007	2 to 3
Representation of Growth Coaches	
Number of different growth coaches	4 to 6
Geographic Location	
Number of states or MEP centers	At least 4

Case Study Protocol for E!WW Clients

This case study protocol serves as the central tool for interviewers to obtain the data needed from E!WW clients to address the key objectives of the case studies:

▪ To provide detailed contextual information and analysis regarding the E!WW program's implementation and outcomes to date; and

▪ To delineate the profile of E!WW clients that choose to participate in the process and to define the results (or lack thereof) generated through participation, so that MEP can estimate the universe of potential participants in E!WW.

The protocol for E!WW clients is designed to gather fundamental data regarding the company itself and to examine the progression of events and activities in sequence, from the MEP client's introduction to E!WW to the outputs and outcomes from the intervention.

Overview of the Company and the Sub-Sector

This section of the protocol is intended to provide opportunity for a general discussion of the company and the manufacturing sub-sector in which the company operates. *[Interviewer should use these questions as ice-breakers and to establish rapport.]*

1. Please provide an overview of the company, i.e., its main products/product lines or services, key customers, and pivotal events in the company's history (e.g., introduction of new products/services, change in ownership/management, etc.).
2. Please tell us about the major changes/new developments you have seen in your company's sub-sector in the past few years and if/how these changes have affected the company.

Past Changes Made by the Company

This section of the protocol is designed to provide insight into the firm's underlying characteristics (depicted across the bottom of the logic model) vis-à-vis introduction of new technologies and significant improvements.

3. What types of technologically new or significantly improved practices, products, processes, services, or marketing strategies has the company introduced in the past 1-3 years? How many of each type of technologically new or significantly improved change has the company introduced in this timeframe?
4. What sources of information or support did the company access in order to make each change?
5. What was the approximate level of investment (e.g., personnel time, financial resources) dedicated to each category of change?
6. What new customers or markets has the company reached or entered in the past 1-3 years?
7. What sources of information or support did the company access in order to identify these new customers or enter the new market(s)?

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Decision Process for E!WW Participation

This section of the protocol, which relates to the "Inputs" column of the logic model, is designed to probe the rationale behind the company's involvement in E!WW as well as (and compared to) other solutions and approaches used by the company.

Introduction to E!WW

8. How did the company first hear of E!WW? *[If the company was recruited by the MEP center as a pilot participant, interviewer should skip to Question #10]*
9. What steps did the company take to learn more about E!WW (e.g., speak with MEP staff, review Eureka! Ranch materials/website, etc.)?
10. What aspects of the program drew the company to consider it as an option?

Reasons for E!WW Participation

11. What would you describe as the key reason(s) (i.e., issues, problems, or threats to be addressed) leading to your company's participation in E!WW? *[Interviewer should limit responses to the top 2 or 3 reasons for participation. If the MEP center recruited the company as a pilot participant and the company representatives describe this as a key reason for participation, interviewer should ask the company to compare the degree of influence of MEP center recruitment to any other top reasons for participation.]*
12. What was the degree of urgency surrounding these concerns in the view of company leadership/management? *[If MEP center recruitment was the overriding factor in deciding to participate, interviewer should skip to the next question. Otherwise, interviewer should try to ascertain if the concerns were critical to the company's survival (extremely urgent), were related to medium- or longer-term competitive advantage/growth (relatively low urgency), or were somewhere in the middle in terms of urgency.]*

Alternatives to E!WW

13. Did the company consider any other options (e.g., participate in other programs, do nothing, etc.) in light of the key motivators mentioned in Question #11 and, if so, what were the options? *[If no other options were considered, interviewer should skip to Question #16.]*
14. Why did the company choose E!WW over any other options considered?
15. Were any of these other options actually pursued? If so, which one(s) and with what results?

Roles of E!WW and Other Factors

This section of the questionnaire is designed to document precisely how E!WW was implemented for this company (in order to discern any variations in process, which could affect outputs and outcomes) and to identify any alternative explanations or causes (e.g., added services) leading to the observed effects.

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E!WW Implementation

This set of questions is related to the "Intervention" column of the logic model.

16. Please tell us, in summary form, what happened during your company's:
    a. Planning session
    b. Eureka! session
    c. Action planning meeting
    d. 30-day Discovery period
    e. Weekly coaching sessions
    f. Discovery report-out session
    g. Re-load meeting (if applicable)
17. What was the company's innovative capacity rating on the E!WW assessment (i.e., green, yellow, red)? Do you think this rating accurately reflected your company's capacity for significant change at the time of the assessment (i.e., prior to participation in E!WW)? Why or why not?
18. Please tell us about the growth coach's roles/activities during the following phases:
    a. Before the company decided to pursue E!WW
    b. Planning session
    c. Eureka! session
    d. Action planning meeting
    e. Weekly coaching sessions
    f. Discovery report-out session
    g. Re-load meeting (if applicable)
19. What was/were the most beneficial segment/segments of the E!WW process? Why were the segment(s) beneficial? ("Segments" include stages of the process, such as the planning session, Eureka! session, action planning meeting, weekly coaching sessions, Discovery period, Discovery report-out session, or re-load meeting, <u>and</u> tools within the process, e.g., initial assessment of innovative capacity, Merwyn rankings, etc.) *[Interviewer should limit the responses to the 1 or 2 most beneficial segment(s).]*
20. What was/were the least useful segment/segments of the E!WW process? Why weren't the segment(s) useful? How could the segment(s) be improved? *[Interviewer should limit the responses to the 1 or 2 least useful segment(s).]*

Engagement in Other Activities and Services

This set of questions is related to the "Added Services" column of the logic model.

21. Did your company access other services during or after the 30-day Discovery period? If so, what type(s) of services? Were the services provided by MEP directly, identified or arranged through MEP but provided by third parties, or identified and arranged by the company itself? What were the most and least beneficial aspects of these services?
22. Did your company engage in any separate activities or programs to promote the company's growth during the same time frame as the E!WW process was ongoing? If yes, what activities or programs? What practices were introduced or

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expanded or what changes were made within the company because of these activities/programs? What were the most and least beneficial aspects of these activities/programs?

Company Decisions and Results

This section of the protocol aims to define specific results and, to the extent possible, to link the results directly to the E!WW intervention or to other activities undertaken by the firm. This section also contains questions designed to explore the anticipated durability of outcomes.

Ideas Identified and Pursued through E!WW

[If possible, the SRI-Georgia Tech team will obtain answers to this set of questions from the company or growth coach prior to the site visit, in order to minimize time spent gathering factual data during the site visits.]

23. How long has it been (number of months) since the company completed the E!WW process (i.e., since the Discovery period read-out meeting)?
24. What were the two ideas pursued by the company in the Discovery period? Were these new ideas, modified ideas, or ideas that had been raised or considered within the company prior to E!WW but never pursued?
25. What were the two ideas submitted to Merwyn but <u>not</u> pursued in the Discovery period? Were these new ideas, modified ideas, or ideas that had been raised or considered within the company prior to E!WW?
26. What were the Merwyn rankings for each of the four ideas?
27. What were the results of the Discovery period work for each of the two selected ideas (i.e., yes, yes but, or no)?

Changes and Outputs Associated with E!WW

This set of questions relates to the "Capabilities and Actions" and "Short-term Outputs" columns of the logic model and to possible rival explanations described under these columns.

28. What is the current status of each of the ideas that was recommended for development (i.e., the yes or yes but results)? (That is, where in the process of rolling the new idea out to market is the company?)
29. For each idea that moved into development, what specific changes in capabilities and/or actions has the company pursued in order to implement the idea(s)? *[Examples could include training of existing staff, hiring new staff with different skill sets or responsibilities (e.g., sales force), development of a prototype of a new product, other marketing investments, new organization of manufacturing, investments in new equipment, or other new investments.]*
30. To what extent are these new capabilities and/or actions related to the company's participation in E!WW as opposed or compared to the influence of other firm practices?
31. What have been the short-term outputs of the company's pursuit of the new idea(s) generated through E!WW? *[Examples could include new product*

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development processes, better employee skills, improved innovation environment, new products or services, new marketing or sales approaches, etc.]

32. To what extent are these outputs related to the company's participation in E!WW as opposed or compared to the influence of other firm practices?

Changes and Outputs from Other Company Activities

This set of questions addresses the possibility of other (non-E!WW) activities contributing to changes related to the "Capabilities and Actions" or "Short-term Outputs" columns of the logic model.

33. Beyond the two ideas pursued in Discovery, has the company pursued other ideas since participating in E!WW? If so, did the idea(s) emerge from the Eureka! session? If the idea(s) didn't emerge from the Eureka! session, what was/were the origin(s) of the idea(s)?

34. What specific new capabilities and/or actions has the company pursued in order to implement the idea(s) described in response to Question #33? *[Examples of actions could include training of existing staff, hiring new staff with different skill sets or responsibilities (e.g., sales force), development of a prototype of a new product, other marketing investments, new manufacturing methods/organization, investments in new equipment, or other new investments.]*

35. What have been the short-term outputs related to the idea(s) described in response to Question #33? *[Examples could include new product development processes, better employee skills, improved innovation environment, new products or services, new marketing or sales approaches, etc.]*

Long-term Outcomes and Implications for the Company

This set of questions relates to the "Long-term Outcomes" column of the logic model and to the rival explanations described under that column.

36. In what other ways (beyond short-term actions or outputs related to development of the two ideas) has E!WW changed or affected the way the company does business? *[Examples could include improved firm performance or other benefits to the firm, such as new sales.]*

37. To what extent have other factors changed or affected the way the company does business? *[Examples of other factors could include external market conditions or other changes within the firm, such as new management/ownership.]*

38. Do you think that participation in E!WW will have, or already has had, a durable effect on company operations or culture? If yes, why and how? If no, why not?

Company Conditions and Characteristics

Through this section of the questionnaire, the interviewer aims to collect or confirm basic company data and to understand the unique firm-level conditions and characteristics that may have inspired participation in E!WW and/or that may have affected implementation, activities, outputs, and outcomes.

Employment

39. How many people does the company currently employ?
40. Has employment at the company changed (gone up or down) or stayed the same in the past 1-3 years? If employment has changed, by how much (number of employees)?
41. Approximately what proportion of your employees has the following levels of educational attainment: (a) less than high school degree; (b) high school degree; (c) two-year/associate's degree; (d) four-year/university degree; (e) advanced degree.
42. What are the primary skill sets held by your company's employees (e.g., administrative, engineering, technician, managerial, etc.), and what is the approximate proportion of employees with each skill set?

Revenues

43. What are the company's current annual revenues?
44. What are the company's projected annual revenues 1-3 years in the future?
45. Are projected revenues in line with the level of revenues desired by the company, or is there a revenue gap? If there is a revenue gap, how large is it?

Capacity Utilization

46. What is the company's current level of capacity utilization (under, at, over)? If under- or over-capacity, by how much?
47. What is the company projected level of capacity utilization (under, at, over) 1-3 years in the future? If under- or over-capacity, by how much?

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Case Study Protocol for MEP Growth Coaches

This case study protocol serves as the central tool for interviewers to obtain the data needed from E!WW growth coaches to address the key objectives of the case studies:

- To provide detailed contextual information and analysis regarding the E!WW program's implementation and outcomes to date; and
- To delineate the profile of E!WW clients that choose to participate in the process and to define the results (or lack thereof) generated through participation, so that MEP can estimate the universe of potential participants in E!WW.

The protocol for E!WW growth coaches is designed to gather perceptions regarding the company's motivations for participation and to examine in detail the process of E!WW implementation.

Company and Sub-Sector Characteristics and Decision Process for E!WW Participation

This section of the protocol is intended to provide opportunity for a general discussion of the company and the manufacturing sub-sector in which the company operates as well as to obtain the growth coach's observations about the reasons for the company's participation in E!WW.

Company and Sub-Sector Profile

1. Please tell us about the company, i.e., its main products/product lines or services, history, key customers, competitors, etc.
2. Please tell us about the major changes/new developments you have seen in this company's sub-sector in the past few years and if/how these changes have affected the company.
3. Have you and/or your MEP center worked with this company in the past? If so, on what activities or programs?
4. Compared to other companies that you/your MEP center work with (in the same sector), how innovative do you consider this company (e.g., leading edge, average, laggard)? Why, and what activities/practices illustrate this observation?

Decision Process for E!WW Participation

This set of questions is related to the "Inputs" column of the logic model.

5. How did the company learn about E!WW? What questions did the company have about this approach?
6. What would you describe as the key reason(s) (i.e., issues, problems, or threats to be addressed) leading to the company's participation in E!WW? *[Interviewer should limit responses to the top 2 or 3 reasons for participation. If the MEP center recruited the company as a pilot participant, interviewer should ask the growth coach to estimate the degree of influence of MEP center recruitment compared to other top reasons for participation.]*

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7. How urgent did these concerns appear to company leadership/management? *[If MEP center recruitment was the overriding factor in deciding to participate, interviewer should skip to the next question. Otherwise, interviewer should try to ascertain if the concerns seemed critical to the company's survival (extremely urgent), were related to medium- or longer-term competitive advantage/growth (relatively low urgency), or were somewhere in the middle in terms of urgency.]*

8. Do you know if the company considered other options (inside or outside MEP) to address the key motivators mentioned in Question #6? If so, what options, and why do you think they chose E!WW?

Roles of E!WW and Other Factors

This section of the questionnaire is designed to document precisely how E!WW was implemented for this company (in order to discern any variations in process, which could affect outputs and outcomes) and to identify any alternative explanations or causes (besides E!WW) leading to the observed effects.

E!WW Implementation

This set of questions is related to the "Intervention" column of the logic model.

9. Please tell us about your actions/roles in the following phases:
   a. Before the company decided to pursue E!WW
   b. Planning session
   c. Eureka! session
   d. Action planning meeting
   e. Weekly coaching sessions
   f. Discovery report-out session
   g. Re-load meeting (if applicable)
10. Please tell us about the company's actions/roles during:
   a. Planning session
   b. Eureka! session
   c. Action planning meeting
   d. 30-day Discovery period
   e. Weekly coaching sessions
   f. Discovery report-out session
   g. Re-load meeting (if applicable)
11. Were there any surprises (e.g., obstacles, timing of events didn't work as planned/predicted, last-minute modifications/additions/subtractions, etc.) during any of these phases? If so, what happened?
12. What stands out for you as the 2 or 3 most important points or developments (e.g., "ah-ha" moments/realizations, ideas generated, agreements reached, decisions made, etc.) from the entire E!WW process with this company? At which step (planning, Eureka! session, etc.) did each of these 2 or 3 points/developments occur?

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Engagement in Other Activities and Services

This set of questions is related to the "Added Services" column of the logic model.

13. Did the company access other services during or after the 30-day Discovery period? If so, what type(s) of services? Were the services provided by MEP directly, identified or arranged through MEP but provided by third parties, or identified and arranged by the company itself?
14. Were there any services that would have been helpful to you and/or the company during or after the Discovery period, but that weren't available? If so, what types of services? What were the obstacles to obtaining these services?

Company Decisions and Results

This section of the protocol aims to define specific results and, to the extent possible, to link the results directly to the E!WW intervention. This section also contains questions designed to explore the anticipated durability of outcomes.

Ideas Identified and Pursued through E!WW

[If possible, the SRI-Georgia Tech team will obtain answers to this set of questions from the company or growth coach prior to the site visit, in order to minimize time spent gathering factual data during the site visits.]

15. How long has it been (number of months) since the company completed the E!WW process (i.e., since the Discovery period read-out meeting)?
16. What were the two ideas pursued by the company in the Discovery period? Were these new ideas, modified ideas, or ideas that had been raised or considered within the company prior to E!WW but never pursued?
17. What were the two ideas submitted to Merwyn but <u>not</u> pursued in the Discovery period? Were these new ideas, modified ideas, or ideas that had been raised or considered within the company prior to E!WW?
18. What were the Merwyn rankings for each of the four ideas?
19. What were the results of the Discovery period work for each of the two selected ideas (i.e., yes, yes but, or no)?

Changes and Outputs Associated with E!WW

This set of questions relates to the "Capabilities and Actions" and "Short-term Outputs" columns of the logic model and to possible rival explanations described under these columns.

20. What is the current status of each of the ideas that was recommended for development (i.e., the yes or yes but results)? (That is, where in the process of rolling the new idea out to market is the company?)
21. For each idea that moved into development, what types of changes (in capabilities or actions) has the company pursued in order to implement the idea(s)? *[Examples of changes in capabilities or actions could include training of existing staff, hiring new staff with different skill sets or responsibilities (e.g., sales force), development of a*

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prototype of a new product, other marketing investments, new manufacturing methods/organization, investments in new equipment, or other new investments.]

22. What have been the results (short-term outputs) of the company's pursuit of the new idea(s) generated through E!WW? *[Examples of short-term outputs could include new product development processes, better employee skills, improved innovation environment, new products or services, new marketing or sales approaches, etc.]*

23. To what extent do you think these changes and results are attributable to E!WW as compared to other explanations (such as other changes in firm practices)?

Long-term Outcomes and Implications

This set of questions relates to the "Long-term Outcomes" column of the logic model and to the rival explanations described under that column.

24. Has the company indicated to you that E!WW has changed or affected the ways the company does business (beyond the results specifically related to development of the two Discovery ideas)? If so, what types of changes or effects does the company perceive? *[Examples could include improved firm performance or other benefits to the firm, such as new sales.]*

25. To what extent do you think other factors changed or affected the way the company does business? *[Examples of other factors could include external market conditions or other changes within the firm, such as new management/ownership.]*

26. Have you observed additional ways (beyond what you mentioned for Question #25) in which you think participation in E!WW will have, or already has had, an durable effect on company operations or culture? If yes, why and how? If no, why not?

Overall Perceptions

This section of the questionnaire is intended to elicit the growth coach's overall perceptions regarding E!WW implementation to date as well as to identify possible refinements or improvements to the approach.

27. What parts of the E!WW process do you consider the most straightforward to implement? Why?

28. What parts of the process do you consider the most challenging to implement? Why? What changes would you recommend to smooth implementation of these program segments?

29. What segments of the E!WW process seem to provide the most value to participants? Why?

30. What segments of the E!WW process seem to offer the least value to participants? Why? How could these segments be improved?

Appendix: Summary of Eureka! Winning Ways

Eureka! Winning Ways (E!WW) is a partnership between MEP and Eureka! Ranch, an organization that specializes in helping major corporations to define new products and services. Based on Eureka! Ranch's methodology for idea development with corporate clients, E!WW is a customized approach to help small- and mid-sized manufacturers grow their revenues and profits through identification of new products, new customers, and new markets. In particular, E!WW is designed to help MEP clients choose ideas that have higher probabilities of success and move selected ideas into implementation more quickly.

E!WW is facilitated by "growth coaches" who guide client companies through the entire process, from planning to idea development. In order to build MEP staff's capacity to serve as growth coaches, and thus to replicate E!WW systematically within MEP centers, MEP has sponsored intensive "boot camps" led by Eureka! Ranch staff. The boot camps consist of: (i) implementation by Eureka! Ranch staff of two Eureka! sessions and two TrailBlazer sessions (see below for descriptions of these sessions) with two MEP clients; and (ii) skills transfer sessions to train MEP staff to conduct the entire E!WW process on their own. After participating in a boot camp and completing an accompanying sublicensing agreement between MEP University and the growth coach's MEP center, MEP staff are qualified to act as E!WW growth coaches and thereby are authorized to conduct the E!WW process on behalf of their respective centers.

The Eureka! Winning Ways process is comprised of the following events and steps:

1. **Preparatory Activities:** Preparatory activities include a planning session and completion (by the client company) of the Eureka! Assessment. The planning session is a one to two hour meeting that takes place one to two weeks prior to the Eureka! session (step 2, below); it involves the growth coach and company leaders. The purposes of the planning session are to confirm agreement with the Eureka! session objective, to review logistics for the session, and to gather information regarding the company's strengths and weaknesses, growth pipeline, and initial ideas for new market, product and customer development. The Eureka! Assessment, which is completed by company participants, is intended to provide Eureka! session organizers a better understanding of the company's innovation readiness and capacity.

2. **Eureka! Session** (also referred to as the "growth summit"): This one-day meeting aims to identify at least 50 "smart" choices for growth and to select the four best ideas for screening by Merwyn (Eureka! Ranch's proprietary test marketing model). The Eureka! session focuses on methods for improving the company's marketing messages, for attracting new customers or entering new markets, and for identifying high-prospect ideas for new products, services, or business models.

3. **TrailBlazer Session** (also called the "action planning meeting"): In this three or four hour session, which takes place about a week after the Eureka! session, the

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company participants and growth coach review the Merwyn Success Screening Results for the four ideas submitted to Merwyn. Based on these results, the group selects the best two ideas to be pursued in the 30-day Discovery period and assigns a "scout" for each idea. The scout is a company staff member who is responsible for taking the idea through the Discovery process and for reporting back to company leadership about whether the company should pursue development of the idea.

4. **30-day Discovery Period and Coaching**: The purpose of the Discovery period is to gather the information necessary to reach a decision regarding idea development.   During this period, the scout conducts research, investigates competitors' efforts in the area, and tests assumptions about the idea, among other actions. During this time, the growth coach is in contact with the scout on a weekly basis, with the aims of helping the scout to overcome obstacles, providing information, and, in general, keeping the scout moving forward toward a recommendation.

5. **Discovery Period Report Out Session**: E!WW frames the possible outcomes of the Discovery period as: yes, which means the idea should move to development; yes, but, which means the idea is viable but must be modified before moving into development; and no, which means no further actions on the idea will be taken. In the Discovery report out session, the scout relays his or her recommendation to company leadership, and the company makes a decision about whether or not to move the idea into development.